

METHOD FOR MANUFACTURE OF A METAL SHELL,  
AND A CUP DESIGNED TO SERVE AS A BLANK.

EdTola 1-12-07 A This application is a 35 USC 371 of PCT/SE03/01156 filed 07/03/2003.  
TECHNICAL FIELD

- 5 The present invention relates to a method for manufacture of a metal shell in a steel, aluminium or copper alloy. The invention also relates to a method for manufacture of a cup designed to serve as a blank.

PRIOR ART

- 10 Forming of metals can take place both in a warm and a cold state. The present invention relates to forming through a specific method called cold forging. Cold forging can be divided into three main types, cold flow pressing, deep drawing and upsetting.

- 15 Cold forging refers to a method of forming at a temperature that lies below the recrystallization temperature of the material. Cold forging has a number of advantages compared with other methods of forming, some of the advantages being forming of complicated shapes, a reduction in material wastage and good surface smoothness without the need for subsequent working. Cold forging also offers the opportunity to influence the metal's grain structure, size and orientation in a unique way. This gives  
20 improved electrical and mechanical properties, improved hardenability and improved hardness through deformation hardening.

- For cold working of a metal, it is necessary for it to have specific properties including good ductility. Carbon steel, low alloy steel, specific aluminium alloys, brass and  
25 bronze are metals with these properties. Apart from adding various alloying metals to the metal, desirable properties are obtained by transformations of the structure of the material due to heat treatment among other things.

- An example is given in JP57089466 of how it is said to be possible to achieve good cold  
30 working properties by alloying aluminium with 1.0 – 3.0 percent by weight Mn and up to 0.3 percent by weight Fe and directly following casting into a billet, i.e. a bar of slender dimensions, in this case with a diameter of 155 mm, quenching the material to thereby obtain magnesium in solid solution in the material. This billet is cut into pieces, which are then cold flow pressed to the desired shape and it is stated that the product  
35 obtained has good strength properties without any heat treatment being required.